

INDOOR ENVIRONMENTS: CURRENT PROGRAM PRIORITIES

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OVERVIEW

EPA OFFICES WORK TOGETHER

THE CARPET POLICY DIALOGUE

This voluntary dialogue was jointly led by OPPTS and OAR and included representatives of a number of other offices within the Agency, as well as all interested stakeholders (i.e., industry, unions, public interest groups, other federal agencies). The dialogue resulted in industry agreement to test new carpet floor-covering materials for total volatile organic compound (VOC) emissions and to explore ways to lower VOC emissions from carpet products. Most importantly, the industry undertook an extensive consumer education program, in cooperation with other dialogue participants, designed to provide the public with information on the role that carpet products play in indoor air quality and ways in which consumers can make informed purchase decisions.

RADON IN DRINKING WATER

OAR is collaborating with the Office of Ground Water and Drinking Water (OGWDW) to develop a unique and innovative drinking water rule for radon. The cost-effectiveness of reducing radon risk is substantially greater for indoor air (from soil gas) than from drinking water. Because of this, EPA, in proposing a maximum contaminant level (MCL) for drinking water (64 FR 59245, November 2, 1999), also made available a higher alternative maximum contaminant level (AMCL) accompanied by a multimedia mitigation program to address risks in indoor air. The proposed regulations will provide states flexibility in how to limit the public's exposure to radon.

EPA's Strategic Plan includes program priorities aimed directly at protecting human health indoors, as well as protecting it as part of broader environmental protection programs. EPA's indoor environments programs address well-known risks, such as radon, lead, asbestos, and environmental tobacco smoke. These programs also provide tools and guidance on good indoor environmental practices in residences, schools, and office buildings. Other EPA programs are broader in scope (e.g., providing safer chemicals and products, reducing exposures to hazardous waste streams, reducing risks to disadvantaged and disproportionately exposed populations), but have the protection of human health indoors as a program component. Although EPA has made significant progress in reducing risks from some well-known hazards indoors, much remains to be done.

EPA's strategic focus revolves around four main areas: science and engineering, guidance and policy development, generating public action, and measuring results.

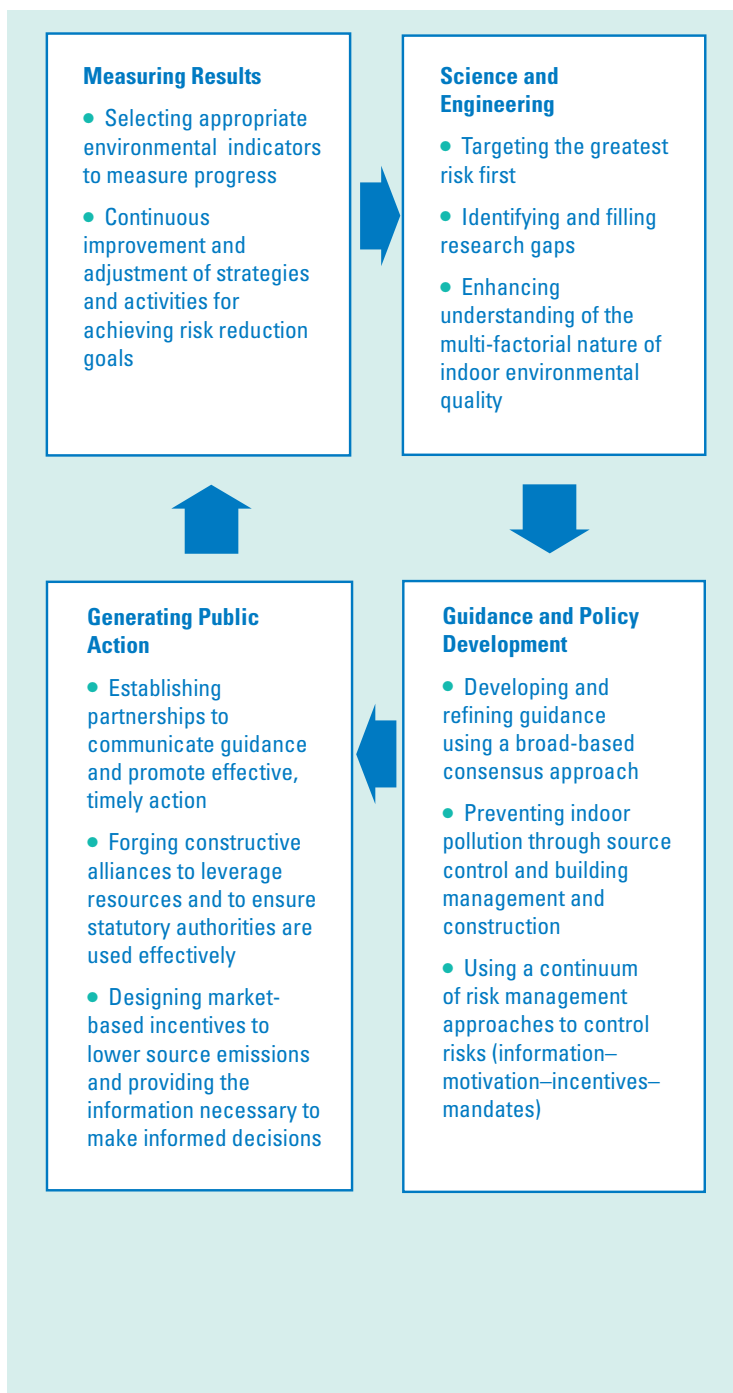
The Agency believes that both regulatory and non-regulatory approaches have value. Regulations mandate behavioral changes by industry and others to prevent exposure to toxic substances.

Non-regulatory processes are often used to mitigate unexpected risks or to mitigate risks through voluntary actions.

PREVENTIVE APPROACHES:

EPA uses the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA) to prevent hazardous pollutants from unnecessarily entering the indoor environment. These statutes require manufacturers or users to submit information to characterize the health risks a substance might pose before it can be manufactured or distributed. EPA can then direct the manufacturer to take measures to reduce exposure to the substance, such as limiting where and how much of the substance can be used, mandating labeling and use of protective equipment to ensure proper use, and requiring training of the people who use the substance. Regulation can also further restrict or even ban a substance when there is no other way to provide adequate protection. EPA works closely with industry and other stakeholders to assist them in reducing risks to workers, communities, and the environment by developing pollution prevention and waste minimization tools. EPA observations of chemical plant incidents and subsequent investigations are being brought to the attention of industry to learn from mistakes made and to further upgrade indoor/outdoor plant safety.

STRATEGIC FOCUS



APPROACHES FOR EXISTING RISKS:

In some cases, products or materials in the indoor environment may present a risk to human health indoors. Besides emissions from products and materials, chemical pollutants can be introduced to the indoor environment from contaminated potable water, outdoor air, soil, and other external sources. In some cases (e.g., asbestos, lead, radon), EPA's approaches to addressing these risks are, in part, specified by statutes.

In many cases, however, EPA's approach has been to obtain non-regulatory, voluntary actions by industry to address risks. The mechanism used for eliciting this voluntary approach has often been stakeholder dialogues. These dialogues may result in the development of voluntary guidelines and standards based on levels of a pollutant, source emissions, ventilation parameters, and building or maintenance practices either in lieu of, or in addition to, regulatory action. Other non-regulatory approaches that may be taken include risk communication, training, technical assistance, cooperative partnerships, community activities, and other pollution prevention activities.

Discussions of each office's priorities and activities for protecting human health indoors are provided below.

OFFICE OF AIR AND RADIATION (OAR)

OAR's goal is to ensure that, by 2005, 16 million more Americans are living or working in homes, schools, or office buildings with healthier indoor air than in 1994. To accomplish this, several measurable milestones have been established for 2005:

- To reduce lung cancer, respiratory diseases, and other health problems, 11.5 million more Americans will benefit from healthier indoor air in their homes by the:
 - Mitigation of 700,000 homes with high radon levels and the construction of one million homes with radon-resistant construction techniques.
 - Reduction of the proportion of households in which children ages six and under are regularly exposed to smoking from 27 percent in 1994 to 15 percent.
- To reduce IAQ-related illness, five percent of office buildings will be managed with IAQ practices consistent with EPA's *Building Air Quality* guidance.
- To reduce health problems in the nearly 10 million children made ill annually from indoor air problems in schools, 15 percent of the Nation's schools will adopt good IAQ practices consistent with EPA's *IAQ Tools for Schools* guidance.
- To reduce the indoor air impacts on asthma, one million children with asthma will have reduced exposure to indoor asthma triggers. In addition, 200,000 low-income adults with asthma, and 2.5 million people with asthma overall, will have reduced exposures to indoor asthma triggers.

NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION (NEHA)—RADON

Working through a cooperative partnership, about 100 NEHA employees are trained annually on indoor air quality (IAQ) and risk reduction strategies. In return, each individual develops a one-year plan of action for achieving IAQ risk reduction as part of their work. The results are impressive.

Tom Dickey, an East Moline, IL local city health department inspector, completed a three-day radon training program in Washington, DC and decided to pursue an incentive-based program for encouraging radon-resistant new construction. He successfully encouraged the City Council to pass a resolution granting a "radon rebate" on the fee that the city assesses on new homes if the homes are built to be radon-resistant. The rebate is roughly proportional to the incremental cost incurred by builders in East Moline to make their homes radon-resistant. Since the rebate program was begun in June 1994, many new homes in East Moline have been built to be radon-resistant. Mr. Dickey has mentored other NEHA/EPA radon community-based risk reduction programs to encourage the use of these kinds of highly-effective incentive strategies.

OAR has recently begun a new initiative on asthma. Its mission is to ensure that indoor environmental management is an integral part of asthma management in the United States. Although both medical treatment and indoor environmental management are needed to effectively control asthma, the latter is not often practiced nor part of the prescription for managing asthma. The Indoor Environments Program will focus on two primary audiences: the public health/medical community and children with asthma and the people who manage their environments. The Program plans to reach these audiences through several activities:

- Health care/managed care summits
- A media campaign
- An in-home education program
- School/day care-based education of children
- Integration of ETS into tobacco control programs
- Improving indoor environments in schools

A number of different specific strategies exist to achieve OAR's priorities. OAR works with its regional offices, state and local agencies, and private partners to get local action on indoor environmental issues. OAR stimulates local action on radon through the State Indoor Radon Grants program, which has resulted in significant risk reduction in homes. A unique feature of the OAR program's voluntary efforts is a network of cooperative partnerships with organizations that speak to and for the public, as well as key constituencies, including county and local environmental health officials, susceptible minority and disadvantaged populations, schools, real estate and building professionals, etc. This network allows OAR to leverage the personnel, expertise, and credibility of these organizations, as well as mobilize hundreds of community-based affiliates at the state and local level.

OAR also takes a proactive approach in providing a broad range of information about indoor air-related risks, as well as the steps to reduce them, through the use of public awareness campaigns, guidance document dissemination, training course delivery, the operation of several linked hotlines and clearinghouses, a web site, and related outreach efforts. These efforts reach a broad audience, including homebuilders and buyers, real estate professionals, health professionals, environmental and public health officials, facility owners and managers, school administrators and teachers, and service providers (such as day care providers, maintenance personnel, and pest control companies).

OFFICE OF PREVENTION, PESTICIDES, AND TOXIC SUBSTANCES (OPPTS)

Many of OPPTS's priorities for 2005 relate to human health indoors. By 2005, OPPTS expects that:

- Lead poisoning will be significantly reduced from levels in the early 1990s, with particular emphasis on children in high-risk groups.
- Of the approximately 3,000 high-volume chemicals in commerce and the 1,000 chemicals expected to enter commerce each year, EPA will significantly increase the introduction and use by industry of safer or "greener" chemicals. Fewer than 100 cases per year will need regulatory management by EPA.
- There will be a significant increase in industry's use of pollution prevention and "green approaches" in the design, development, manufacture, and use of chemicals so that there is increased availability of safer substitutes.
- EPA will annually review about 2,500 Premanufacture Notifications submitted by chemical manufacturers and take appropriate risk management actions to protect human health and the environment. EPA will concentrate on protecting children and workers from potential inhalation and dermal exposures.
- EPA has proposed to amend the TSCA Inventory Update Rule (IUR) to collect information needed for risk screening and develop and implement a chemical hazard classification scheme.
- EPA will achieve significant progress in acquiring test data on chemicals entering commerce and high-volume chemicals, including testing for endocrine disruption.
- There will be significant reductions in exposures to toxic fibers, e.g., asbestos.
- Toxicity test data gaps will be identified for household chemicals which result in substantial exposures to consumers and children. Toxicity testing actions will be initiated or completed for 50 percent of these chemicals. Risk management actions will result in significant risk reduction to consumers, and information/education programs will empower them.

- EPA will improve the ability of the public to reduce exposure to specific environmental and public health risks by making current, accurate, substance-specific information widely and easily accessible.
- EPA will provide chemical data and tools to the public for them to understand and analyze environmental data. The data and tools will be tailored to suit various needs, such as ranking potential concerns for indoor environmental quality and “green design,” as well as product labels to be easily understood by consumers.
- All pesticides licensed before 1988 will have complete and reviewed databases, in accordance with the most current requirements, to support their uses (more recently licensed pesticides will already be in full compliance).
- Where necessary, consumer information on labels will be updated and clarified to prevent unnecessary indoor use and exposures.
- For nearly all pesticides, risk assessments accounting for all sources of exposure, including indoor exposures, will be conducted.

OPPTS programs are primarily oriented towards prevention rather than remediation. Both the toxics and pesticide programs operate in an environment of mandated deadlines and regulatory requirements. Science and risk assessment are integral; harmonization of test methods between toxics and pesticides, as well as with others both inside and outside EPA, is an important operating principle. In addition, tool and data development in the areas of exposure, hazard, risk, and economics are ongoing activities in both the toxics and pesticides offices.

OPPTS has regulatory programs in place for two critical indoor pollutants, lead and asbestos. Activities to address these pollutants include:

- Training and certification programs for workers
- State programs and grants
- Information disclosure upon real estate transfer and renovation
- Federally identified hazard levels

CONSUMER LABELING INITIATIVE

The Consumer Labeling Initiative (CLI) is a voluntary, cooperative partnership to foster pollution prevention, empower consumer choice, and improve understanding by presenting clear, consistent, and useful information on household consumer product labels. Government, industry, and other groups are working together in the CLI to make it easier for consumers to find, read, and understand label information about a product's safe use and its environmental and health impacts. This information will enable customers to compare products and safely use the ones they select.

Between 1996 and 1998, CLI conducted significant research with consumers around the country which included one-on-one interviews, focus groups, and phone and written surveys. The purpose of the research was to determine how consumers use pesticide and cleaner labels, if and when they read the labels, and what information they thought could be improved or deleted.

The outcome of the research was a series of recommendations for label improvements in both language and format, as well as the implementation of a consumer education campaign called "Read the Label First!" The education campaign is now in full swing and includes the distribution of posters; brochures on the importance of reading labels; promotional items with relevant hotline phone numbers, as well as the campaign logo; fact sheets; TV and radio segments; a truck advertising campaign; and various train-the-trainer sessions given by our state and industry partners, as well as many other CLI participants.

In addition to its regulatory programs, OPPTS also has voluntary pollution prevention activities designed to produce safer indoor environments. OPPTS works with industry stakeholders to develop tools and information that can lead to formulation of safer consumer products for use in the indoor environment. Following Executive Order 13101, OPPTS works with federal consumers, such as the General Services Administration (GSA), to provide them with the information they need to make purchasing decisions that are better for the environment, both indoors and out.

OPPTS also has the Pesticide Environmental Stewardship Program (PESP). PESP is EPA's program designed to address the risks of pesticides and encourage the use of safer pesticides. A major element of PESP is the encouragement of voluntary partnerships with private industry to promote safer pesticides and environmental stewardship.

Consumer education is important and OPPTS is working with partners to clarify product labeling procedures. OPPTS is also working with partners to develop tools to improve the assessment of chemical safety in consumer products and building materials.

OFFICE OF RESEARCH AND DEVELOPMENT (ORD)

ORD produces technical reports, methods, models, and other scientific information to improve the Agency's understanding of the effects of indoor contaminants and their sources, as well as risk management options to reduce exposure. In addition, this research provides technical information that is used by OAR and OPPTS to develop guidance documents on indoor environmental quality and understand the relative risks of various indoor contaminants. The data produced by ORD are also used by product manufacturers to evaluate the risks posed by their products and by building owners and operators responsible for protecting tenants from harmful levels of indoor contaminants. Specific activities planned by ORD are to:

- Develop information on the effects of both biological and chemical contaminants found indoors.
- Develop methods and models to quantify source emissions.
- Collect data on human exposures to indoor contaminants through field studies.
- Produce multi-pathway exposure models that include modules that account for the contribution of contaminants from various indoor microenvironments and take into account penetration of ambient air indoors.
- Develop information to aid school and building managers, the private sector, and government officials in determining which control approaches (e.g., air cleaners, source management, ventilation system design/operation) will have the greatest impact on risk reduction.
- Develop information for manufacturers of building materials and products that pose the greatest risk, assisting them in preventing and reducing emissions through product redesign and process changes.

ORD, OAR, and OPPTS have worked jointly to identify the most critical uncertainties associated with indoor pollutants and have developed the following list of key research needs:

- Source Characterization/Solutions
 - Develop information on and prioritize indoor environmental sources, and establish processes to reduce or prevent pollutant exposures associated with those sources. The most important needs are: (1) prioritization of indoor environmental pollution sources in terms of next actions, e.g., additional studies, guidance development, industry dialogues, and pollution prevention; (2) development of standardized methods for source emission testing; and (3) understanding of typical and high-end indoor exposures, how these exposures relate to indoor pollutant levels, and how their relative risks compare to outdoor air problems and environmental hazards in other media.
 - Assess the impact of building practices on indoor environmental quality. Develop and compare investigation and mitigation techniques, including IEQ and energy performance of ventilation systems in large buildings, cost/benefit analysis of IEQ controls, and assessment of IEQ guidance utilization.
- Health Effects Assessment
 - Improve the Agency's understanding of the health effects of indoor pollutants, both chemical and biological, by developing data on the risks of indoor pollutants, including irritancy, central nervous system and sensory effects, and the effects of mixtures.

- Exposure Assessment
 - Improve the Agency’s understanding of the exposure-time-activity pattern factors that contribute to multi-pathway indoor human exposures. Characterize and provide an integrated assessment of these exposures (e.g., inhalation, dietary, dermal) to indoor contaminants and to the dose within the human body, culminating in a first-generation exposure model.
- Risk Assessment
 - Improve the Agency’s current knowledge of indoor environmental risks by assessing risks from exposure to chemical pollutants, including organics, nitrogen oxides, carbon monoxide, particulate matter, and microbiologicals.

Current ORD indoor environmental research is conducted as a component of several broader research programs, including particulate matter, air toxics, and human health protection, where indoor exposures contribute significantly to the risks. Research will be conducted using ORD’s grants program under the National Center for Environmental Research and ORD laboratories and centers using in-house research facilities and staff, as follows:

MAJOR RESEARCH AREA	RESPONSIBLE NATIONAL LABORATORY
Source Characterization/Solutions	National Risk Management Research Laboratory (NRMRL)
Exposure Assessment	National Exposure Research Laboratory (NERL)
Health Effects Assessment	National Health and Environmental Effects Research Laboratory (NHEERL)
Risk Assessment	National Center for Environmental Assessment (NCEA)

CONVERSION VARNISH EMISSIONS

ORD completed a study which examines the emissions of formaldehyde and other organic chemicals from conversion varnishes into the indoor environment. Conversion varnishes provide sturdy, chemical- and water-resistant coatings for kitchen and bathroom cabinets and some furniture. They are made up of two components, a polymer resin and a catalyst, which are mixed prior to application. The mixture then reacts to form a continuous film coating on the surface of the wood. The study showed that the organic solvent portion of the coating is emitted quickly, typical of most coatings. These emissions will occur mostly while the cabinet is still in the manufacturing plant. The formaldehyde, however, is emitted by a different mechanism. Rather than showing the emission behavior typical of most coatings, the formaldehyde is emitted over a longer period of time. For the coatings tested, the total amount of formaldehyde emitted was between two and eight times the amount present in the formulation. This reflects a net production of formaldehyde resulting from the chemical reactions that occur during curing and ageing of the coating. In addition, the formaldehyde emissions do not decay as quickly as other (evaporative) emissions more typical of coatings. Rather, the emissions level out over time. The coatings continue to emit significant amounts of formaldehyde even after 42 days, long after they could be placed in a consumer's home. Modeling showed the potential for exposures near the irritation threshold for formaldehyde from this source alone. The next phase of work on this project is to test promising new alternatives to conversion varnishes to determine whether they can reduce total emissions and indoor emissions (and therefore potential for human exposure).

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE (OSWER)

OSWER's priorities applicable to protecting indoor environments include:

- Improve indoor workplace safety by reducing the risk of industrial chemical accidents. OSWER will develop and disseminate alerts and advisories to industrial sectors based on an enhanced knowledge acquired from increased EPA chemical accident investigations. A joint EPA-OSHA Chemical Accident Investigation Team is currently in place to investigate major chemical accidents and disseminate "lessons learned" to involved industry sectors.
- Reduce risk of worker exposure by reducing the most persistent, bioaccumulative, and toxic (PBT) chemicals in industrial waste streams found at work. By 2005, reduce these types of chemicals in waste streams to 50 percent of 1991 levels.
- Continue to develop and employ innovative strategies for promoting indoor cleanup of contaminants by reducing the cost of waste management without sacrificing human health or environmental protectiveness.
- Continue to provide technical expertise and conduct response actions using Comprehensive Environmental Restoration Compensation and Liability Act (CERCLA) authority. CERCLA authority may be used to respond to threats of environmental releases of hazardous substances, pollutants, or contaminants that are found within homes and offices.
- Expand OSWER's ongoing partnerships with the construction and remodeling industries to promote the use of safe and recycled materials indoors.

PROMOTING LOCAL GREEN BUILDER PROGRAMS

OSWER, in partnership with OPEI and the National Association of Home Builders Research Center (NAHB-RC), is developing a model "green builder" program, based on existing programs in such cities as Austin, TX and Denver, CO. This program will educate builders on environmentally friendly construction and offer them marketing incentives for applying these techniques. The model, which will be designed to be easily adopted by local home builders associations and governments nationwide, will be tested by the Greater Atlanta Home Builders Association as it develops its own "green builder" program. OSWER, OPEI, and NAHB also jointly sponsored the first Green Buildings conference aimed at mainstream home-builders on April 8-9, 1999 in Denver, CO.

Many of OSWER's principles and strategies are designed to reduce risk to humans in the workplace through concepts such as source reduction. OSWER also seeks to reduce future risk inside plants by making unsafe processes safe in the future. OSWER strives to employ good science and technology to make sound environmental policy decisions which are protective and based on common sense and reality. The Office works closely with industry and other stakeholders to assist them in reducing risks to their workers, to their communities, and to the environment by developing pollution prevention and waste minimization tools and ideas. OSWER works to ensure that a high level of public participation is achieved and that state and local involvement exists so that policies and regulations are protective, equitable, and implementable.

OSWER also develops new technologies through research and promotes innovative remediation concepts (such as Brownfields) to achieve the timely, cost-effective cleanup of previously contaminated sites and to develop policy and regulation to prevent future ones from occurring. These cleanup actions seek to minimize threats from exposure to contamination sources whose routes can affect indoor environments (e.g., tap water or indoor air). These pollution prevention strategies, risk management activities, remediation strategies, and chemical emergency response/process safety work, aimed at cost-effectively eliminating, reducing, or minimizing emissions and contamination, will result in cleaner and safer environments in which Americans can reside, work, and enjoy life indoors as well as out.

OSWER also seeks to increase resource efficiency and improve waste management in the construction and demolition industries through the promotion of environmentally friendly building or "green building" programs. While OSWER's primary interest in this field involves expanding recycling and reuse of building products, as well as reducing the amount of demolition debris, the "green building" movement also includes such elements as energy efficiency, water conservation, and indoor environmental quality. Therefore, opportunities exist for OSWER, OAR, and other offices to join forces to create effective, unified "green building" programs that command the respect and interest of the building industries and the public. Through such programs, EPA can further the construction of buildings that protect human health and environmental quality.

OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE (OECA)

OECA's priorities applicable to indoor environments issues are to:

- Work with media program offices to identify areas to be targeted (e.g., high-risk, disproportionately exposed populations and other priority areas of non-compliance).
- Provide the public, especially disproportionately exposed and under-represented populations, with a meaningful opportunity to participate in the development and implementation of environmental protection strategies that involve the National Enforcement and Compliance Program.
- Ensure that all federal and state enforcement programs include a plan for encouraging and responding to citizen reports of violations or other environmental incidents.
- Develop the tools to identify or target particular areas or populations associated with disproportionate exposure and other appropriate factors.
- Work with the Interagency Working Group on Environmental Justice to address case and policy issues that develop between agencies.
- Develop joint agency enforcement initiatives (e.g., EPA/OSHA joint chemical pollution/worker safety cases).

OECA's programs are primarily for the enforcement and implementation of regulatory requirements. In the indoor environments area, OECA is currently focusing on compliance with asbestos in schools requirements, lead-based paint disclosure requirements, and illegal use of pesticides in homes.

However, through the Office of Environmental Justice's (OEJ) Environmental Justice Small Grants and Community/University Grants Programs, OECA has funded numerous local projects dealing with indoor environmental issues, such as lead dust, radon, and asthma. In addition, OEJ has worked closely with OAR to support the Open Airways program and to jointly sponsor a training session on asthma issues and solutions.

OFFICE OF WATER (OW)

Under the Safe Drinking Water Act, EPA sets and enforces standards on public water supplies to prevent human health impact. Human exposures to contaminants brought into the home by drinking water can result from inhalation and dermal exposure, as well as by ingestion via eating and drinking. EPA attempts to take all of these exposure routes into account in the risk assessments that are done for regulatory development.

Inhalation exposure is the major exposure pathway for the risk posed by radon in drinking water. It is also a very significant exposure pathway for other volatile contaminants found in drinking water, such as chlorinated solvents. Inhalation exposure results from showering, in which a large amount of water is aerated in a small enclosed space, as well as from other indoor water uses.

OFFICE OF CHILDREN'S HEALTH PROTECTION (OCHP)

EPA's Office of Children's Health Protection was established in 1997 to promote children's environmental health within EPA, across the federal government, in the non-governmental sector, and in states and communities.

MISSION AND GOAL

OCHP's mission is to make the protection of children's health a fundamental goal of public health and environmental protection in the United States. The Office's goal is that every individual, community, organization, corporation, and government agency will:

1. understand the link between children's health and the environment, and
2. take positive action to improve children's environmental health.

OCHP's overall strategy for addressing risks to children is twofold: (1) to build the infrastructure and capacity to address children's health issues at the federal, state, and community levels and among private sector organizations and individuals and (2) to increase awareness and action on children's environmental health issues throughout all sectors of society.

EPA SCIENCE AND REGULATIONS

Within EPA, OCHP serves as a focal point for providing technical support on children's environmental health issues to policy makers and outside organizations. It promotes consideration of children's health by media program and research offices, and coordinates Agency-wide initiatives and interagency initiatives with other federal agencies.

In the area of science, OCHP works to improve the science to increase our understanding of children's unique risk and provide sound data on which to base decisions by advocating for increased funding for children's environmental health issues, improved risk assessment procedures, and the conduct of a comprehensive longitudinal cohort study of the relationship between children's health and their environment.

OCHP works to improve the standard-setting process so that risks to children are explicitly considered by providing guidance and analysis on the costs and benefits of protecting children. OCHP works with the National Center for Environmental Economics on indicators of environmental factors affecting children's health.

FEDERAL LEADERSHIP

EPA has exercised a leadership role in the federal community on children's environmental health, in part by recognizing the fundamental importance of a top to bottom partnership with the Department of Health and Human Services and other agencies through the President's Task Force on Environmental Health Risks and Safety Risks to Children.

STATES

OCHP provides resources and assistance to the states to develop programs to address their children's environmental health issues through state organizations such as: the Association of State and Territorial Health Officials (ASTHO); the Environmental Council of the States (ECOS); the National Conference of State Legislatures (NCSL); and the National Governors Association (NGA). In addition, OCHP provides resources to EPA's Regional offices to support their efforts to build capacity in the states and local communities.

COMMUNITIES

OCHP works with community organizations to help them understand and address their children's environmental health issues. Examples include: (1) the Child Health Champion Community Program to empower local citizens and communities to take steps toward protecting their children from environmental health threats; (2) the Child Health Champion Environmental Monitoring and Education Project to provide easily understood up-to-date environmental information for communities; and (3) working with youth organizations, such as the Boy Scouts and Girl Scouts, 4-H, the Future Farmers of America, and the United National Indian Youth, to incorporate children's environmental health into their existing programs. OCHP maintains EPA's Children's Health Protection Web Site, which provides information to parents and others on ways to protect children from environmental risks.

PRIVATE ORGANIZATIONS

OCHP works with private sector organizations on children's environmental health issues. For example, OCHP is working with health care provider organizations, such as the American Academy of Pediatrics and the American Nurses Association, to promote the incorporation of environmental health into pediatric and nursing practices to increase the ability of primary health care providers to identify, prevent, and reduce environmental health threats to children.

OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT (OARM)

The Office of Administration and Resources Management's main goal regarding human health indoors is to provide a safe and healthful environment for EPA's own employees. Because of their expertise within EPA, OARM often works in conjunction with other EPA offices, other federal agencies, and outside organizations on indoor environmental issues.

- As part of the EPA New Headquarters project, OARM performs chamber testing, modeling, and specification writing to strive for improved indoor environmental quality. The protocols that have been developed by OARM for office furniture during this process are now being used in an Environmental Technology Verification (ETV) project with the furniture industry that will result in a national furniture testing program.
- OARM is also actively working with OPPTS to institutionalize the "Green Cleanser" project and develop language to promote the use of these cleaners in EPA buildings.
- With Public Technology, Inc. (PTI), OARM participated in publishing two guides for sustainability in buildings. OARM is continuing to work with the President's Council on Sustainable Development on these and related projects.
- With the General Services Administration, OARM has developed guides for the management of asbestos and lead at federal facilities.
- OARM's multimedia laboratory uses computer technology to build learning and program support tools that have wide application in the federal, private, and academic communities.

REGIONAL OFFICES

The EPA Regions support and implement the national programs discussed earlier in this Appendix. In doing so, these offices have demonstrated initiative and creativity in working with very limited resources to address indoor risks in innovative ways.

When available, the Regions use statutory authorities. For example, EPA Regional Offices are:

- Working with state and tribal partners to develop lead programs, per Title IV of the Toxic Substances Control Act, for certification and training of lead workers.
- Working with state and tribal partners to implement radon programs using the grant authorities of the Indoor Radon Abatement Act to promote voluntary programs for radon awareness, testing, and mitigation.
- Working with state and tribal partners to develop and implement asbestos-in-schools management programs, per the Asbestos Hazard Emergency Response Act.
- Working with public water supplies to address the requirements of the Safe Drinking Water Act and the Lead and Copper Rule.

Of equal, and in some cases more, importance are unique efforts for outreach, education, and technical assistance for non-regulatory programs, using a multitude of government, non-profit, and other stakeholder partners. Examples include:

- Through Regional Indoor Air Quality Programs, efforts have been tailored to educate the public on a variety of issues using an increasing array of effective tools. Depending on geography and climate, such issues as toxic mold, asthma and its triggers, CO poisoning, indoor use of pesticides, and environmental tobacco smoke are being addressed.

REGION 1 **NH TOOLS FOR SCHOOLS**

Two schools in New Hampshire were the first successful pilot schools in the country to fully and successfully implement EPA's Tools for Schools Indoor Air Action Kit. The Pennichuck Junior High School in Nashua and the Little Harbor Elementary School in Portsmouth began the process of implementing the Kit in the Fall of 1996 by appointing an IAQ Coordinator and forming an IAQ Team. To better inform team members about indoor air quality and how to more fully use the guidance, each team was given indoor air training by the NH Division of Human Health Services and an EPA grantee, the NH Coalition for Occupational Safety and Health (NH COSH).

REGION 2 **CLINICAL DIRECTORS NETWORK PROJECT**

It is important to research effective ways to reduce asthma morbidity and translate that research into practice. Translation is the focus of a Region 2-funded grant to a non-profit entity called Clinical Directors Network (CDN). CDN's asthma project is operating in 11 sites in four EPA Regions nationwide. It is a clinically controlled study designed to measure the improvement in asthma morbidity that can be gained from implementing both in-home environmental interventions and improved clinical management of asthma. It makes use of the "Best Practices" known so far, and will offer insight as to the best ways to implement this information.

- IAQ in Schools is being addressed through large outreach campaigns using EPA's IAQ Tools for Schools Kit. Leveraging of stakeholder resources is crucial to these efforts.
- Exposure to lead from paint, dust, soil, and drinking water are addressed with large outreach and education campaigns, incorporating many partners.

REGION 10 **SEATTLE/ALASKA HEALTHY HOMES**

Through a grant with the American Lung Association of Washington, the Master Home Environmentalist Program promotes human health by increasing awareness of home environmental pollutants and encourages actions to reduce exposures. The MHE program uses innovative and holistic approaches to identify hazards and ways to make homes healthier. The program relies on volunteers to reach out to local communities to deliver the latest information about environmental health issues. Volunteers complete extensive training in lead, dust, indoor air, household hazardous chemicals, and moisture problems in the home. Outreach has been conducted in Galena, AK and Seattle, WA. There is a new program beginning in Yakima, WA.